UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,456	03/19/2004	L. Murray Dallas	15912/09038	7291

27530 7590 12/21/2005

NELSON MULLINS RILEY & SCARBOROUGH, LLP
1320 MAIN STREET, 17TH FLOOR
COLUMBIA, SC 29201

EXAMINER	
COY, NICOLE A	

ART UNIT	PAPER NUMBER
3672	

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/804,456	DALLAS, L. MURRAY	
	Examiner	Art Unit	
	Nicole Coy	3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,9,10 and 12-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,9,10 and 12-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/12/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10/12/2005 have been fully considered but they are not persuasive. While Dallas does not disclose at least a first, second, and third coil tubing gripping surface, it would have been obvious to one having ordinary skill in the art to modify Dallas to have a first, second, and third coil gripping surface in order to insert multiple coils into a well and reduce running time.

This rejection is made non-final.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-5, 9, 10, and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dallas (USP 6,516,891) in view of Dearing et al. (US Patent Application 2002/0125014).

With respect to claim 1, Dallas discloses a coil tubing injector assembly comprising: a frame structure (26) for mounting above a wellhead; and at least one gripper chain drive system (38) mounted to the frame structure for injecting a plurality of coil tubing strings into and extracting the coil tubing strings from a subterranean well and having a plurality of opposed gripping blocks (62). Dallas further

discloses a gripper chain drive system having at least first and second coil tubing gripping surfaces respectively adapted to grip a said coil tubing sting of a respective first and second diameter (see abstract). Dallas teaches that first and second coil tubing strings may be injected synchronously or asynchronously to satisfy different requirements in various applications, such as in well stimulation, to stimulate separate production zones, for stimulation and recording pressure and temperature or spotting fluids or for cleanout or house electrical conductors without repositioning the respective coil tubing strings. See column 3 line 47 to column 4 line 17.

However, Dallas does not disclose a third tubing gripping surface adapted to grip a third coil tubing string of a third diameter. Dearing teaches running time is reduced as the number of strings simultaneously run into the well are increased. See page 2 paragraph [0030]. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Dallas to include at least a third coil gripping surface adapted to grip a third diameter as taught by Dearing in order to reduce the run time.

With respect to claim 2, Dallas teaches an assembly wherein each of the gripping blocks (62) comprises at least one said gripping surface adapted to grip one of the plurality of coil tubing strings. See figure 5.

With respect to claim 3, Dallas teaches an assembly wherein the at least first, second and third gripping surfaces are concave. See figure 5.

With respect to claim 4, Dallas teaches an assembly comprising a single said gripper chain drive system (38), wherein the single chain drive system has a pair of opposed gripper chain drives (42), wherein each gripper chain drive in said pair includes

a respective said plurality of opposed gripping blocks that are substantially identical (62), and wherein each of the gripping blocks defines at least the first, second gripping surfaces. It would have been obvious to modify Dallas to include a third gripping surface as taught by Dearing et al. in order to grip three coil strings and reduce running time.

With respect to claim 5, Dallas teaches two gripping wherein each of the gripping blocks has at least two said gripping surfaces, each of the gripping surfaces being respectively adapted to grip a tubing string of a different diameter (see figure 5). However, Dallas does not teach four gripping surfaces, each of the surfaces being able to grip a tubing string of a different diameter. Dearing et al. teaches two or more gripping surfaces in order to run different sized tubing strings into the well in order to reduce running time. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Dallas by including four gripping surfaces, each surface adapted to grip a tubing string of a different diameter as taught by Dearing et al. in order to run multiple tubing strings of different diameters down a well to reduce running time.

With respect to claim 9, Dallas teaches a coil tubing injector assembly, comprising: at two independently drivable gripper chain drive systems (see abstract, 38), each gripper chain drive system having a pair of opposed gripper chain drives (42), each gripper chain drive system having a plurality of substantially identical gripping blocks (62) for gripping respective tubing strings of respectively different diameters (18, 22), wherein the coil tubing injector assembly can be used to inject at least two coil

tubing strings having respective different diameters into a well either synchronously or asynchronously (see column 3 lines 47-56). Dallas does not teach having at least three gripper chain drive systems. Dearing et al. teaches that it is advantageous to run two or more spooled tubing strings into a well in order to reduce running time. It would have been obvious to make at least three independently drivable gripper chain drive systems in order to reduce running time.

With respect to claim 10, Dallas teaches that an assembly wherein each gripping block has a single gripping surface (see column 6 lines 48-67).

With respect to claim 12, Dallas teaches two gripper chain drive systems each having gripping blocks with gripper surfaces of a different size than the gripping surfaces of the other three gripper chain drive systems (see column 6 lines 48-67). However, Dallas does not teach four gripper chain drive systems. As explained above, Dearing teaches two or more spooled tubing strings that are simultaneously run into the well in order to reduce running time which have different sizes (see page 3 paragraph [0042]). It would have been obvious to modify Dallas by including four gripper chain drive systems having different sizes as taught by Dearing et al. in order to run different sized tubing strings into the well and reduce running time.

With respect to claim 13, Dallas teaches two gripper chain drive systems each having gripping blocks with gripper surfaces of a different size than the gripping surfaces of the other three gripper chain drive systems (see column 6 lines 48-67). However, Dallas does not teach four gripper chain drive systems. As explained above, Dearing teaches two or more spooled tubing strings that are simultaneously run into the

well in order to reduce running time which have different sizes (see page 3 paragraph [0042]). It would have been obvious to modify Dallas by including five gripper chain drive systems having different sizes as taught by Dearing et al. in order to run different sized tubing strings into the well and reduce running time.

With respect to claim 14, Dallas teaches an assembly wherein the at least one gripper chain drive system (38) comprises a pair of opposed gripper chain drives (42), each gripper chain drive having a drive sprocket (44) mounted to a drive shaft (46), each drive shaft being coupled to a motor (52) whereby the drive shafts (46) of the opposed gripper chain drives are rotated at a same angular velocity but in opposite rotation directions.

With respect to claim 15, Dallas teaches an assembly wherein each gripper chain drive (42) further comprises: an idle sprocket (48) mounted to an idle shaft (50); and a gripper chain (42) engaged with the drive sprocket (44) and the idle sprocket (48), the gripper chain (42) having the gripping blocks (62) attached around an outer periphery of the gripper chain (42).

With respect to claim 16, Dallas teaches an assembly wherein each gripper chain drive further comprises a pressure beam (86) supported by the frame structure (26) and movable with respect to the frame structure, the pressure beam (86) being adapted to support the gripper chain (42) while the gripper chains grip the coil tubing string (18, 22).

With respect to claim 17, Dallas teaches an assembly further comprising a roller chain system (84) operatively mounted to the pressure beam (86) for reducing friction between the pressure beam (86) and the gripper chain (42).

With respect to claim 18, Dallas teaches an assembly wherein the pressure beam (86) is connected to an actuator (92) mounted to the frame structure for moving the pressure beam (86).

With respect to claim 19, Dallas teaches a method for injecting or extracting at least two differently-sized coil tubing strings into or from a subterranean well using a single coil tubing injector, comprising the steps of: gripping at least two differently-size coil tubing strings with at least two differently-sized gripping surfaces formed on gripping blocks attached to opposed gripper chains; and driving the opposed gripper chains at substantially the same angular velocity in opposite rotational directions to inject the at least two coil tubing strings into the well, or extract the at least two coil tubing strings from the well (see column 8 line 55 to column 9 line 4, wherein the opposed gripper chains are inherently at the same angular velocity). However, Dallas does not disclose three differently-sized coil tubing strings. Dearing et al. teaches three differently-sized gripping surfaces in order to reduce running time (see page 3 paragraph [0042]). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Dallas by including three differently-sized coil tubing strings as taught by Dearing et al. in order to insert tubing strings of different sizes into the well and reduce running time.

With respect to claim 20, Dallas teaches a step of actuating pressure beams to force the gripping surfaces of the gripper chains against the at least two coil tubing strings (see column 7 lines 7-25). As explained above, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Dallas by including three tubing strings as taught by Dearing et al. in order to reduce running time.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole Coy whose telephone number is 571-272-5405. The examiner can normally be reached on M-F 8:00-5:30, 1st F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nicole Coy

nac

DAVID BAGNELL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600